

3M™

FireMaster S® Duct Wrap

Commercial Kitchen Grease and Air Ventilation Duct Fire Protection System

Product Data



FRD-4 Complies with NFPA-96
1994 Edition

1. Product Description

3M™FireMaster S® Duct Wrap is a foil-encapsulated, non-combustible, inorganic, flexible fireproofing wrap. It is used in combination with 3M Fire Barrier 2000+ Silicone Sealant to fire rate duct assemblies such as: commercial kitchen exhaust grease ducts, air ventilation ducts, chemical exhaust ducts, stair pressurization ducts, and trash and linen chutes. 3M™FireMaster S® Duct Wrap is of uniform thickness and density, thus providing specified fire ratings based on the

number of wraps applied. 3M FireMaster Duct Wrap is a proven performance alternative to 2-hour fire-resistance-rated shaft enclosures. With its excellent insulating capability, it protects combustible constructions at zero clearance for commercial kitchen grease and air ventilation ducts in tight congested areas. 3M Fire Barrier 2000+ Silicone Sealant used in combination with 3M™FireMaster S® Duct Wrap provides an alternate means of protection to rigid shafts by fire stopping the duct when it penetrates fire rated wall and floors.

Product Features

- Completely inorganic
- Shaft alternative
- Zero clearance to combustibles protection
- Lightweight, compact design saves space

- Flexible system requires minimum labor
- Problem solver for tight, congested areas
- Totally foil encapsulated system for protection against material degradation

2. Applications

3M™FireMaster S® Duct Wrap is an ideal fire resistive enclosure for commercial kitchen grease ducts and fire rated air ventilation exhaust ducts. It is proven performance alternative to 2-hour fire-resistance rated shaft enclosures. 3M Fire barrier 2000+ Silicone Sealant is used in combination with 3M FireMaster Duct Wrap to firestop the duct when it penetrates fire rated walls and floors.

3. Physical Properties

Product	Unit	Size	Units Ctn.	Wt./Ctn.
3M™FireMaster S® Duct Wrap	Roll	1-1/2"x24"x25' (38,1 mm x 60,9 cm x 762 cm)	1	43 lbs (19,5 kg)
3M™FireMaster S® Duct Wrap	Roll	1-1/2"x48"x25' (28,1 mm x 121,9cm x 762 cm)	1	86 lbs (39 kg)

4. Specifications

This specification guide covers the application of 3M™FireMaster S® Duct Wrap and 3M Fire Barrier 2000+ Silicone Sealant.

3M™FireMaster S® Duct Wrap should be installed in accordance with 3M's published installation instructions. Multiple steel ducts in a single

3M™FireMaster S® Duct Wrap enclosure system are not permitted. Only individual steel ducts should be wrapped with 3M™FireMaster S® Duct Wrap.

Application	Fire Resistive Rating	Enclosure System	Through-Penetration System
Grease Ducts	1 or 2 hours	2 layers 3M™FireMaster S® Duct Wrap, 3" (7,6 cm) perimeter and longitudinal overlap	ULC-FRD-4

Application	Fire Resistive Rating	Enclosure System	Through-Penetration System
Air Ventilation Duct Systems	1 hour	1 layer 3M™FireMaster S ® Duct Wrap, 3" (7,6 cm) perimeter and longitudinal overlap or optional butt joint plus collar wrap method	ULC-FRD-3
Air Ventilation Duct Systems (2 or 3 sides)	1 hours	1 layer 3M™FireMaster S ® Duct Wrap, 3" (7,6 cm) perimeter and longitudinal overlap	ULC-FRD-5
Air Ventilation Duct Systems	2 hours	2 layers 3M™FireMaster S ® Duct Wrap, 3" (7,6 cm) perimeter and longitudinal overlap or first layer butt joint with second layer overlap method	ULC-FRD-3
Air Ventilation Duct Systems (2 or 3 sides)	2 hours	2 layers 3M™FireMaster S ® Duct Wrap, 3" (7,6 cm) perimeter and longitudinal overlap OR first layer butt joint with second layer overlap 3" (7,6 cm) method	ULC-FRD-5

5. Performance

A. Typical Physical Properties

3M™FireMaster S ® Duct Wrap fully encapsulated

Color:	white
Thickness:	1½" (38mm)
Density:	6Lbs/cf
Weight:	24" (60,9 cm) wide roll 43 lbs. (19,5 kg); 48" (121,9 cm) wide roll 86 lbs. (39 kg)

Flammability (ASTM E 84/UL 723)

Foil:	Flame spread 5 Smoke developed 5
Blanket:	Flame spread 0 Smoke Developed 0

Thermal Resistance

R Value per ASTM C 518: 4.15 per inch (10,54 cm) at 70°F (21°C)

B. Firestopping Properties

Fire Barrier 2000+ Silicone

Color: light gray
Working time: 10 to 20 minutes
Cure Time: 14 to 21 days at 77° F *25° C) 50% R.H.
Sag of slump flow: < 0.1" (.25 cm)
Elongation at Break: 500%

C. Listing

Agency	Reference Standard/File Number
Underwriters' Laboratories of Canada (ULC)	Grease Duct Enclosures – Fire Resistant Ducts Guide No. (40 U21) Design No. FRD 4
Underwriters' Laboratories of Canada (ULC)	Ventilation / Pressurization Duct Enclosures – ISO 6944 Fire Resistant Ducts Guide No. (40 U21) Design No. FRD 3 and FRD 5

6. Installation Techniques

The 3M™FireMaster S ® Duct Wrap system should be installed by a qualified contractor in accordance with 3M's published installation manual.

Storage:

The 3M™FireMaster S ® Duct Wrap, and 3M Fire Barrier 2000+ Silicone Sealant must be stored in a dry warehouse environment. Pallets should not be stacked.

Preparatory Work:

3M™FireMaster S ® Duct Wrap is installed with common tools, such as knives, banders and capacitor discharge guns for applying insulation pins. In order to install the duct firestop system, the surfaces of all the openings and penetrating items need to be clean, dry and free of dust.

Method:

General instructions for installing the 3M™FireMaster S ® Duct Wrap include a two-layer wrap construction applied directly to the duct. A 3-inch (7,6 cm) perimeter and longitudinal overlap are used on both layers to meet ULC/FRD-4 assembly. And 2 layers wrap construction applied directly to the duct with the first layer butt joint and second layer overlap 3-inch (7,6 cm) to meet ULC/FRD-3 assembly. Tape is in place on the interior layer. For duct spans greater than or equal to 24 inches (60,9 cm), insulation pins are recommended on the bottom of horizontal runs and on vertical runs to prevent blanket sag.

When the duct penetrates a fire rated wall, ceiling or floor, an UL-Classified firestop system must be employed such as system C-AJ-7015.

Fill remaining annular space between the wrapped duct and periphery of the opening with 4-1/4" (10,8 cm) thickness of scrap 3M™FireMaster S ® Duct Wrap firmly packed into opening. Apply 1/4" (6,35 mm) minimum 3M Fire Barrier 2000+ Silicone Sealant over packing material within the annulus, flush with top surface of floor or both surfaces of wall.

For a complete guide covering installation techniques and materials and detailing independent systems contact your authorized 3M distributor.

Precautions:

Follow approved working practices. Wear government approved respirators as needed, or proper clothing, reading all warning labels, and follow instruction on the MSDS.

7. Maintenance

No maintenance is required when installed in accordance with the 3M installation manual. Once installed, if any section of the 3M™FireMaster S ® Duct Wrap is damaged, the following procedures will apply:

- The damaged section should be removed by cutting the steel banding holding it in place.
- A new section of the same dimension should be cut

from a roll of 3M™FireMaster S ® Duct Wrap, either 24" (60,9 cm) or 48" (121,9 cm) wide.

- The new section should be placed and fitted ensuring the same overlap that existed previously.
- The steel banding should be placed around the material and tensioned so as to sufficiently hold the 3M™FireMaster S ® Duct Wrap in place.

8. Availability

3M™FireMaster S ® Duct Wrap and 3M Fire Barrier 2000+ Silicone Sealant are available through 3M's network of nationwide distributors.

9. Safe Handling Information

Consult Material Safety Data Sheet prior to handling and disposing of 3M™FireMaster S ® Duct Wrap.

Warranty and Limited Remedy. This product will be free from defects in material and manufacture for a period of ninety (90) days from date of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. If this 3M product is proved to be defective within the warranty period stated above, your exclusive remedy and 3M's sole obligation shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the product.

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